Exhibit A

Declaration of Dr. Andrew S. Cromarty

UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS TYLER DIVISION

ADVANCED MARKETING SYSTEMS, LLC,	§	
	§	
Plaintiff,	§	**Civil No. 6:15-cv-00134-JRG-KNM**
	§	**LEAD CASE**
v.	§	
	§	
CVS PHARMACY, INC.,	§	
	§	**JURY TRIAL DEMAND**
Defendant.	§	
	§	

DECLARATION OF DR. ANDREW S. CROMARTY IN SUPPORT OF ADVANCED MARKETING SYSTEM'S OPENING CLAIM CONSTRUCTION BRIEF

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ATTORNEYS FOR PLAINTIFF ADVANCED MARKETING SYSTEMS, LLC

I, Dr. Andrew S. Cromarty, hereby declare and state as follows:

I. Introduction and Qualifications

1. I have been retained by plaintiff Advanced Marketing Systems, LLC ("AMS" or "Plaintiff") as an expert in this case. I expect to testify at trial regarding the matters set forth in this report if asked about these matters by the Court or the parties' attorneys. It is my understanding that AMS alleges that defendants CVS Pharmacy, Inc., Walgreen Co., and Brookshire Grocery Co. (collectively, "Defendants") infringe certain claims of U.S. Patents Nos. 8,219,445 ("the '445 Patent"), 8,370,199 ("the '199 Patent") and 8,538,805 ("the '805 patent") (collectively the "AMS patents" the "asserted patents," or the "patents-in-suit"). In this declaration, I will set forth my opinion as to the construction of particular claim terms of the patents-in-suit.

2. My full curriculum vitae is attached as Exhibit 1 to this declaration.

A. Educational Background and Career History

3. I have received the following academic honors, awards, appointments, and recognition: Visiting Scholar, Stanford University (1990); National Science Foundation Assistantship, to design a new programming language (1983); Departmental Teaching Assistantship, University of Massachusetts at Amherst (1982); National Institutes of Health/NINCDS Research Assistantship, for computer science and mathematical modeling of biological systems (1981-1982); Deutscher Akademischer Austausch Dienst (DAAD) Doctoral Fellowship, to direct neurophysiology and computer modeling research in Europe (1980); National Institutes of Health/NINCDS Research Assistantship, for computer science and mathematical modeling research (1979-1980); National Science Foundation Summer Research Fellowship, for neurophysiology research (1977); Bausch and Lomb Honorary Science Award

(1974); Cum Laude Society, Newark Academy (1974); National Merit Scholarship Finalist (1974).

4. I earned a Ph.D. in Computer and Information Science from the University of Massachusetts at Amherst in 1988, writing my doctoral dissertation on "Programming Constructs for Real-Time Distributed Knowledge-Based Systems." While there I also wrote a second doctoral dissertation on mathematical modeling and computer simulation of brain structure and function. I earned a Master of Science in Computer and Information Science the University of Massachusetts at Amherst in 1980. I earned a Bachelor of Arts double degree in Biology and Psychology, and simultaneously a Bachelor of Arts degree in Music, from Wesleyan University in 1978.

5. Since obtaining my Ph.D., I have worked in numerous technical management positions and overseen dozens of successful projects developing software, hardware, and services. My experience includes overseeing technical staff from groups very small in size to hundreds of employees. My experience in these projects has been consistently direct and hands-on, and has delivered working products and services to paying customers. I also have worked as a computing professional by developing software and teaching programming in over 30 languages.

6. I have personally authored on the order of one million lines of software code.

7. During my professional career I have held senior technical positions at several corporations, including Principal Scientist at both Digital Equipment Corporation and Compaq Computer Corporation, the highest management-awarded corporate scientist hiring rank at those corporations, and Division Research Director and then Corporate Principal Scientist at ADS, the

highest management-awarded corporate scientist rank at that corporation, for a combined total of approximately a decade.

8. I have held numerous senior corporate executive and technical management positions during my career, including Chief Technology Officer (CTO) and Chief Information Officer (CIO) of Union Square Advisors, a San Francisco technology mergers & acquisition investment bank; CIO and CTO of DAX Solutions, Inc., a primary provider of Internet-based digital asset services to the Hollywood TV and movie industry with international operations; CTO of SoftNet Systems, Inc., a billion-dollar NASDAQ-traded Internet services and telecommunications company; Chairman of the Board of Freewire Networks, Inc., a wireless broadband service, content, and e-commerce business; CTO of ISP Channel, then the third-largest cable Internet provider in the United States; CTO of Aerzone Corp., a $100 million wireless broadband service joint venture; President/CEO of Heath Company, a consumer electronics manufacturer and retailer; and Board of Directors member of additional firms including Intelligent Communications Inc., an international satellite service provider, and SoftNet Ventures, a corporate venture investment fund. Presently I sit on several not-for-profit and corporate boards of directors, and am the President and CEO of Distributed Systems Technology LLC.

9. I am credited with a number of worldwide historic Internet and technology firsts, including first to stream 1,000,000 live videos on the Internet for an event, world's first demonstration of Java-based distributed Internet games, world's first live wireless webcasts, and the first high-definition "set-top box" networked screening product and system for the movie industry.

10. My experience with computing, distributed systems, software, networking and internetworking, and retail transaction systems includes:

a. Active on the Internet in its successive historical manifestations since approximately 1975.

b. Developed and published novel networking, software and distributed computing techniques for my doctoral research, 1983-1988.

c. Active networking and electronic communications researcher and experimentalist since 1978, involved in defining and implementing novel communications protocols, experiments, and techniques including: packet radio techniques, propagation research, TCP/IP extensions, administrative management of a subset of the public Internet allocated for packet radio use, design and implementation of American Red Cross emergency/disaster communications systems, and design and creation of networked satellite communications systems and packet gateways to the Internet.

d. Created and directed a Computer Systems group that grew into a corporate division, and developed novel networking and distributed computing techniques, 1983-1990.

e. Work included directing research and development in, and publishing, design and performance of state-of-the-art client-server approaches, networking protocol design, load-balancing techniques, distributed fault tolerance and server failover approaches, and caching and backend database systems.

f. Founder and President of a startup firm in 1990 that provided distributed computing and networking consulting analyses, software, and services to U.S.

Government/military and commercial clients, 1990-1993; and subsequently in 1994-1996, provided to commercial customers e-commerce, Web catalog, and Internet services, entailing early market study, in-house development, and adoption of open-source software tools implementing session management and shopping cart technology on the World Wide Web starting in 1994, including open source software for shopping carts using validated client-server session identifiers published in or before February 1995. Among my firm's catalog Web sites were the first known hockey retailer and the first known soccer retailer on the Web, software for which was executing on a Web server on a public host computer, in a functioning embodiment using unique time-stamped session identifiers appended to HTTP URLs for servicing client-server service requests, at least as early as October 10, 1994.

g. Principal Scientist at the Network Systems Laboratory of Digital Equipment Corporation, 1996-1999. While at Digital Equipment Corporation, I developed a number of networking methods and systems, which may be subject to contractual nondisclosure agreements. In 1996 I developed the networking method of filtering active content from HTTP traffic at a network firewall. I also developed in 1997 the methods and systems of internetworked peripheral devices and services including methods and systems related to wirelessly internetworking printers, keyboards, remote displays and monitoring systems, and in 1998, additional architectures, methods and systems for high-performance internetworked multimedia client-server systems that were used for applications including education and

entertainment. I also actively managed a collection of server equipment and Internet services at Digital's corporate Internet gateway and distributed in locations throughout the world, and I developed the managed-services business model and product architecture for an international web-based news distribution joint venture with Reuters, later spun out and sold to CBS.

h. From 1999 and thereafter, I have served as CTO of several broadband and Internet-related firms ranging up to a billion dollars in size and spanning all forms of network connectivity with global operations.

i. From 2005 to 2007, as CTO and CIO of DAX Solutions, Inc., I oversaw operation of the largest Internet-based digital media asset management system serving the Hollywood industry. This system and service employed multiple server systems comprising an international Content Development Network (CDN) of Web servers and provided services daily to thousands of industry customers. The service employed database management systems, Java-based application-server software, load-balancing and server-affinity systems employing both extrinsic (e.g. IP-based) and intrinsic (e.g. session ID-based) techniques, caching, session identifiers, Web "cookies," Web server software, monitoring and failover systems, and other systems and technologies for identifying individual users material to the current matter. I specifically had management oversight over the design, development, deployment, maintenance, field service, and operation of all these systems and technologies and I worked with them daily on a hands-on basis.

j. Author of several patent filings currently before the USPTO.

k. Past testifying expert in several patent matters including those involving card systems, retail purchase of soft goods, payment systems, electronic shopping cart systems, storage and transmission of cash-equivalent economic value on behalf of retailer consumer purchasers associated with customer cards, and corresponding hardware and software systems and methods.

l. Further detail appears in the CV attached as an Exhibit to this declaration.

B. Past and Present Engagements

11. I have been retained as an expert by AMS in Advanced Marketing Systems, LLC v. Hy-Vee, Inc., Case No. 15-cv-103 in the Western District of Wisconsin.

12. Distributed Systems Technology, LLC, a firm of which I am an owner, receives compensation of $500 per hour for my time working on this matter plus reimbursement of reasonable expenses. My compensation is in no way related to the outcome of this litigation.

C. Materials and Information Considered

13. As part of this work, I have studied the patents-in-suit, the related file histories and intrinsic records of the patents-in-suit, and the claim construction briefings to date in the above-referenced litigation. A complete listing of the documents that I have considered is provided in Exhibit 2 to this declaration.

14. I have analyzed the patents-in-suit in view of the meanings that persons of ordinary skill in the art at the times of filings of such patents would ascribe to various terms within the asserted claims of the above-referenced litigation.

15. If called upon to do so, I am prepared to testify as an expert witness in this regard. Furthermore, I may testify in response to other fact or expert witnesses in this case.

II. Understanding of Claim Construction

16. I understand that the interpretation of the meaning of disputed claim terms is determined by the Court. To construe patent claims, I understand that a court may use the claim language itself, other claims, the patent specification, the prosecution history of the patent and the prior art cited during the examination of the patent. I understand that in absence of claim construction, claim terms are "generally given the ordinary and customary meaning" as understood by "a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application."

17. I understand that in absence of claim construction, claim terms are "generally given the ordinary and customary meaning" as understood by "a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application."

18. It is also my understanding that the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.

19. I understand that a "person of ordinary skill in the art" is a hypothetical person considered to have the usual skills and knowledge in a particular field related to the invention claimed in a patent.

A. Person of Ordinary Skill in the Art

20. In my opinion, the level of skill to which the patents-in-suit are directed would be a person with at least (a) a bachelor's degree in computer science or a related field, or alternatively, four years of experience developing distributed systems or network-based systems, or alternatively, (b) an equivalent amount (e.g., at least four years) of work or research

experience in an area related to the technology disclosed and claimed in the patents-in-suit providing an understanding of (i) the operation of computer-based electronic couponing systems, including such systems that are integrated with a retailer's point-of-sale systems; (ii) techniques to provide individualized discounts to potential purchasers as well as techniques to provide identical discounts to many potential purchasers, and (iii) the integration of computer-based electronic couponing systems with a retailer's website, mobile app, etc. Such knowledge and understanding can be the product of a variety of experiences, including, e.g., formal education (engineering or computer science), research, training, and experience in designing, implementing, and/or operating an electronic digital couponing system and/or consulting with respect thereto.

21. As a Ph.D. in Computer and Information Science who has worked in industry designing and implementing systems for at least 30 years with the experience identified herein, including without limitation having served as an expert in prior patent matters involving card-based identification and digital and networked payment data processing systems, I am of the opinion that I am a person of at least ordinary skill in the art with respect to the inventions claimed in the patents-in-suit.

III. Claim Construction for Patents-in-Suit

22. A person of ordinary skill in the art would understand that, as disclosed in the specification of the patents-in-suit; *e.g.,* in the `445 patent at col. 8:9-12 and 24-28, a discount vehicle can be in the form of a printed publication or be distributed by any other practical manner of distribution. They would further understand this could include electronic forms of distribution, such as a website or mobile application, since such internet-based distribution of discounts existed prior to the time of the invention of the asserted patents.

23. This is evidenced, for example, by the disclosure of U.S. Patent 6,336,099 to Barnett, et al. (hereinafter "Barnett"), attached hereto as Exhibit 3. Barnett discloses, *inter alia*, electronic distribution of coupons to personal computers of customers. *See*, Barnett at Abstract. Significantly, it also discloses that the consumer can select particular coupons from a group of coupons presented to them on a retailer's website (Barnett at col. 9:33 et seq.), and then print or send their selections electronically to the retailer for electronic redemption (Barnett at col. 11:34-43). Thus, Barnett at least discloses a discount vehicle in the form of a website.

24. It is further evidenced by the disclosure of U.S. Pat. App. Pub. 2004/0107135 to Deatherage, et al. (hereinafter "Deatherage"), attached hereto as Exhibit 4. Deatherage discloses, *inter alia*, that a user accesses a retailer's website containing images and data representative of discount coupons (Deatherage at ¶¶ 0044 and 0053), and loads desired coupons to their account associated with a user identification number (Deatherage at ¶0052) on the retailer's server (Deatherage at ¶0054). When the user checks out in the retailer's store, the coupon data is transmitted from the retailer's server to a checkout system (Deatherage at ¶0056). Thus, similarly to Barnett, Deatherage at least discloses a discount vehicle in the form of a website.

25. Since systems such as disclosed in Barnett and Deatherage existed at the time the invention was made, a skilled artisan would appreciate that a discount vehicle could exist in electronic form as a website or mobile application.

26. The claim term "discount" as used in the asserted claims[1] does not require construction because its meaning would be readily understood by one of ordinary skill in the art. A discount is properly thought of by a skilled artisan as a reduction in the price of a particular product or products. The word "coupon" as proposed by the Defendants is unduly narrowing,

[1] I understand the asserted claims are claim 9 of the `445 patent, claims 15 and 28 of the `199 patent, and claim 1 of the `805 patent.

because a coupon could arguably be thought of as a representation of, or embodiment of, a discount (such as a paper coupon), but a discount does not have to be in the form of a particular embodiment (e.g., a paper coupon).

27. If the Court decides that a more specific construction for the term "discount" is required, the following is more accurate than Defendants' proposal: "wherein the discounts each comprise a reduction in the price of one or more of said plural products."

28. The plain meaning of the term "in-store discount" as used in the asserted claims is clear to one of ordinary skill in the art, and does not require further construction. It does not refer to a particular type of coupon issued by a particular person (a retailer or a manufacturer), as urged by Defendants, but simply to a discount redeemed by a customer in a retail store or service establishment. There is no basis for making the proposed distinction between retailer vs. manufacturer in the asserted claims.

29. If the Court decides that a more specific construction is required, the following is more accurate than Defendants' proposal: "a reduction in the price of one or more of said plural products to be redeemed at a store or service establishment."

30. The plain meaning of the terms "during the checkout process" and "during checkout" as used in the asserted claims is clear to one of ordinary skill in the art, and does not require further construction. It does not require or even suggest *physical* purchase of products, as urged by Defendants, but simply to a checkout process. There is no basis for limiting the asserted claims to only physical purchases.

31. The plain meaning of the terms in the asserted claims reciting that the discount vehicle (or customer account) is associated with a select code is clear to one of ordinary skill in the art, and does not require further construction. Moreover, the asserted claims are not

indefinite because, when read in context, these claims can be understood by persons of ordinary skill in the art with reasonable certainty. For example, all the asserted claims recite the select code at least as 1) permitting tracking of the vehicle or customer account during checkout; 2) uniquely identifying all the discounts for all the plural products associated with the vehicle or customer account; and 3) capable of being selectively deactivated for only particular discounts associated with purchased products, such that the select code remains active for future use with yet unused ones of the discounts associated with the plural products. Based on these and other recitations of the asserted claims, one of skilled in the art would understand the degree of association required between the select code and the discount vehicle or customer account.

32. At paragraph 30 of the Declaration of Peter B. Abell Regarding Claim Construction of the `445, `199, `805 Patents, attached hereto as Exhibit 5, Mr. Abell opines that the "link" between the select code and the discount vehicle is unclear because the claims do not specify if the code exists in the same database as information about the vehicle, and/or how direct the link has to be between the vehicle and the code. I disagree, at least because one of skill in the art would understand that there were many different well-known ways in the prior art to accomplish a "linkage" between a select code and a discount vehicle or customer account, and it would not affect the functionality of the invention.

33. The plain meaning of the term "code" as used in the asserted claims is clear to one of ordinary skill in the art, and does not require further construction. It does not require or even suggest machine-readable *as opposed to* human-readable information, as urged by Defendants, but simply to a way of expressing information. There is no basis for limiting the claims to only machine-readable information. The claimed codes could, for example, be both machine-readable and human-readable information in the form of a numerical code.

34. The plain meaning of the term "uniquely identifying all the discounts for all of the plural products associated with the vehicle" as used in the asserted claims is clear to one of ordinary skill in the art. It does not require any further explanation, as urged by Defendants. Defendants' proposed construction ("the code is the only code that identifies each of the discounts for all of the products on the vehicle") is confusing in that it includes "*each* of the discounts for *all* of the products . . . ," which is vague and injects complication and uncertainty into the claim where there is none. Furthermore, there is no reason for adding the sentence "[t]he select code cannot identify less than all of the products in the vehicle" as proposed by Defendants, since the claim already recites that the select code identifies *all* the discounts for *all* the products associated with the vehicle. The proposed additional sentence is simply redundant.

35. Regarding claim 28 of the `199 patent, Defendants contend the above-discussed claim term ("said code uniquely identifying all the discounts for all of the plural products associated with the customer account") is indefinite because "said code" lacks antecedent basis. More particularly, the claim recites a "select code" and a "customer code" prior to the appearance of the term "said code" in the claim.

36. Claim 28 is not indefinite because this claim, when read in context, can be understood by persons of ordinary skill in the art with reasonable certainty. One of skill in the art would understand that "said code" refers to the select code, since the term "select code" appears *immediately prior* to "said code" in the claim. Moreover, "said code" is immediately followed by the recitation of "[said code] uniquely identifying all the discounts for all of the plural products associated with the customer account." A skilled artisan reading the remainder of the patent could easily determine that "said code" refers to the select code, because the select

code is described at several places in the patent as performing this identification function (*e.g.*, at claim 1, col. 10:61-64 and claim 9, col. 11:55-64).

37. A person of ordinary skill would understand that, as described in the specification (*e.g.,* `445 patent at col. 10:15-28), selective deactivation of redeemed discounts such that yet unused discounts remain active, is performed at checkout by a retailer's data processor specifically programmed for this task. Thus, AMS's proposal of the following language would serve to improve the clarity of the asserted claims: "said select code can be selectively deactivated for only the discounts associated with the purchased products by redemption of the code associated with the vehicle, at checkout by a specifically programmed data processor, without deactivating discounts not associated with the purchased products."

38. The plain meaning of the term "select code can be selectively deactivated" or "selectively deactivates the select code" as used in the asserted claims is clear to one of ordinary skill in the art, especially in view of the language that follows it in the claims: ". . . for only particular discounts, of the plurality of discounts, associated with the purchased products by redemption of the code associated with the vehicle such that the code remains active for future use with yet unused ones of the plurality of discounts associated with said plural products." It does not require any further explanation. There is no reason for adding the phrase "ensuring that the select code cannot be used to obtain a product discount that was already obtained" as proposed by Defendants.

39. The plain meaning of the term "a data processor attached to said checkout terminal" as used in the asserted claims is clear to one of ordinary skill in the art, especially in view of the language that follows it in the claims: ". . . for receiving information regarding transactions associated with checkout." It does not require any further explanation. There is no

reason for modifying it to recite that the data processor is "directly connected" to the checkout terminal as proposed by Defendants. One skilled in the art would understand that there is no reason why the data processor would need to be directly connected to the checkout terminal.

40. The term "customer account" as used in claim 28 of the `199 patent and claim 1 or the `805 patent does not render these claims indefinite because these claims, when read in context, can be understood by persons of ordinary skill in the art with reasonable certainty. A customer account is described in detail in the claims 1) as being associated with a customer identification code; 2) as comprising two or more discounts of the discount vehicle selected by a customer; and 3) as being associated with a select code. A skilled artisan would understand that these three elements of a customer account are "structural" in that they exist in the recited data processing system at least as data structures in memory.

41. Moreover, a skilled artisan at the time the invention was made would have understood the concept of a customer account in the electronic couponing arena, since internet-based distribution of discounts existed prior to the time of the invention of the asserted patents.

42. This is evidenced, for example, by the disclosure of the Barnett patent discussed above. Barnett discloses, *inter alia*, electronic distribution of coupons to personal computers of customers. *See*, Exh. 3, Barnett at Abstract. More particularly, Barnett discloses that the consumer can select particular coupons from a group of coupons presented to them on a retailer's website (Barnett at col. 9:33-42), store them in a "coupon data file" (Barnett at col. 9:43-44), and then send their selections electronically to the retailer for electronic redemption (Barnett at col. 11:34-43). Thus, Barnett at least discloses a customer account in the form of a data file containing discounts stored in memory along with a customer identification code, which can then be redeemed when checking out at a retailer.

43. It is further evidenced by the Deatherage published patent application discussed at Section IV.A., disclosing that a user accesses a retailer's website containing images and data representative of discount coupons (Exh. 4, Deatherage at ¶¶ 0044 and 0053), and loads desired coupons to their account associated with a user identification number (Deatherage at ¶0052) on the retailer's server (Deatherage at ¶0054). When the user checks out in the retailer's store, the coupon data is transmitted from the retailer's server to a checkout system (Deatherage at ¶0056).

44. Since systems such as disclosed in Barnett and Deatherage existed at the time the invention was made, a skilled artisan would appreciate that a customer account could exist in electronic form, as claimed.

45. Each of claim 28 of the `199 patent and claim 1 of the `805 patent recite a data processor for performing the following three operations: 1) receiving information regarding transactions associated with checkout, selected products and the discounts associated with the select code forming a part of the transactions; 2) processing the discounts in accord with the select code; and 3) selectively deactivating the select code for only particular discounts, of the plurality of discounts, associated with the purchased products by redemption of the select code associated with the customer account such that the select code remains active for future use with yet unused ones of the plurality of discounts associated with the plural products. One of ordinary skill in the art would understand the structural arrangements of the claimed data processor from these recited operations of the data processor.

Dated: January 14, 2016

Dr. Andrew S. Cromarty